



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,685	12/05/2001	Janne Haavisto	442-010740-US(PAR)	7613
2512	7590	07/25/2008		
PERMAN & GREEN 425 POST ROAD FAIRFIELD, CT 06824			EXAMINER LAM, HUNG H	
			ART UNIT 2622	PAPER NUMBER
			MAIL DATE 07/25/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/004,685	<b>Applicant(s)</b> HAAVISTO, JANNE	
	<b>Examiner</b> HUNG H. LAM	<b>Art Unit</b> 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on Pre-Appeal Brief filed on 01/16/08.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11-17, 19 and 20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-17, 19 and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/05/01 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. The amendments and the Pre-appeal Brief Request for Review, filed on 08/06/07 and 01/16/08, have been entered and made of record. Claims 10 and 18 are canceled. Claims 1-9, 11-17 and 19-22 are pending.

### ***Response to Arguments***

2. Applicant's arguments, see the Pre-appeal Brief Request for Review, filed on 01/16/08, with respect to claims 1-9, 11-17 and 19-22 have been fully considered and are persuasive. The Final Office of Action mailed 10/18/07 has been withdrawn and replaced by the forth coming Non Final Office Action.

### ***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmermann (US-6,704,310) in view of Tsai (US-6,750,909).

With regarding to **claim 1**, the claim is a method of an apparatus claim 11. Therefore, claim 1 is rejected and analyzed as the limitations claimed in claim 11.

With regarding to **claim 11**, Zimmermann discloses a device comprising a camera module and an electronic device (Fig. 1; camera 41/USB device; Col. 1, Ln. 5-20; Col. 4, Ln. 21-28; Col. 6, Ln. 14-41; a host is inherently connected to USB 20), comprising means for generating image data in the image sensor of the camera module (Figs. 1; camera 41), said image sensor comprising at least one row of pixels and said image data comprising the data generated by said rows of pixels Col. 3, Ln. 51-55; the image sensor 12 inherently includes at least one row of pixels and generates image data from the row of pixel), a means for collecting statistical data on said image data (Col. 3, Ln. 23-25; Col. 5, Ln. 55-60), wherein said statistical data is suitable for processing an image to be generated (Col. 5, Ln. 55-67); wherein the device further comprises means for transmitting image data and statistical data from the camera module to the electronic device essentially at the same time (Fig. 6; see image and statistics data from two USB packets 94 and 96; Col. 6, Ln. 1-46).

However, Zimmermann fails to explicitly disclose a means for adjusting on the basis of said statistical data, said image sensor of the camera module for generating image data for a next image.

In the same field of endeavor, Tsai teaches an imaging device wherein functions of focusing, exposure control and white balance of the photographed image data are done by computing image statistics based on image data in a data processor (Col. 3, Ln. 48-55). In light of the teaching from Tsai, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of

Zimmermann by computing image statistics to perform the functions of focusing, exposure control and white balance. The modifications thus provide a control loop back camera system with better image quality.

5. Claims 1-9, 11-17, 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmermann (US-6,704,310) in view of Prentice (US-2003/0,030,729).

With regarding to **claim 1**, Zimmermann discloses a method for the transmission of data between a camera module and an electronic device (Fig. 1; camera 41/USB device; Col. 1, Ln. 5-20; Col. 4, Ln. 21-28; Col. 6, Ln. 14-41; a host is inherently connected to USB 20), said method comprising the steps of generating image data in the image sensor of the camera module (Figs. 1; camera 41), said image sensor comprising at least one row of pixels, and said image data comprising the data generated by said row of pixels (Col. 3, Ln. 51-55; the image sensor 12 inherently includes at least one row of pixels and generates image data from the row of pixel), collecting statistical data from the image data (Col. 3, Ln. 23-25; Col. 5, Ln. 55-60), wherein said statistical data is suitable for processing an image to be generated (Col. 5, Ln. 55-67); and wherein the method further comprises: transmitting said image data and said statistical data from the camera module to the electronic device essentially at the same (Fig. 6; see image and statistics data from two USB packets 94 and 96; Col. 6, Ln. 1-46).

However, Zimmermann fails to explicitly disclose using said statistical data for adjusting said image sensor of the camera module for generating image data for a next image.

In the same field of endeavor, Prentice teaches an imaging device wherein automatic exposure control modifies contrast and brightness setting bases on a luminance histogram of previously captured images ([0057]; the luminance histogram of the previously captured images is interpreted as said statistical data). Prentice further teaches a host computer 12 that controls a camera picture-taking process by setting the exposure time via the CCD timing generator 32 from the microprocessor 38 ([0024]). In light of the teaching from Prentice, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Zimmermann to perform automatic exposure control from a luminance histogram of previously captured images. The modifications thus provide better image quality.

With regarding to **claim 2**, Zimmermann in view of Prentice discloses a method wherein said image data and said statistical data are transmitted interlaced with each other on at least one common bus (Zimmermann: Fig. 6; see USB 20, image and statistics data from two USB packets 94 and 96; Col. 6, Ln. 1-46).

With regarding to **claim 3**, Zimmermann in view of Prentice discloses a method wherein said image data and said statistical data are transmitted in the same data frame (Zimmermann: Col. 6, Ln. 1-46), said data frame comprising at least one image data unit at least one statistical data unit (Zimmermann: Fig. 6; see image and statistics

data from two USB packets 94 and 96), and at least one synchronization code to separate said image data unit from said statistical data unit (Zimmermann: Col. 4, Ln. 45-65; Col. 6, Ln. 14-41).

With regarding to **claim 4**, Zimmermann in view of Prentice discloses a method wherein said image data unit comprises image data generated by at least one said row of pixels (Zimmermann: Col. 3, Ln. 51-55; the image sensor 12 inherently includes at least one row of pixels and generates image data from the row of pixel).

With regarding to **claim 5**, Zimmermann in view of Prentice discloses a method wherein said row of pixels is a vertical or horizontal row in said image sensor (Zimmermann: Col. 3, Ln. 51-55; Col. 4, Ln. 10-20).

With regarding to **claim 6**, Zimmermann in view of Prentice fails to explicitly disclose wherein said data frame is transmitted from the camera module to the electronic device in the form of a serial synchronized differential signal (Zimmermann: Fig. 1; USB 20; Col. 6, Ln. 1-46; Prentice: USB 42).

With regarding to **claims 7**, Zimmermann in view of Prentice discloses wherein the camera module and the electronic device are integrated into one single device and that said bus is a device-internal bus (Prentice: Figs. 1-2; see Webcam 10; [0020-0024]).

With regarding to **claim 8**, Zimmermann in view of Prentice discloses a method wherein said transmitted statistical data is used as the generation basis for at least one parameter related to image processing (Zimmermann: Col. 5, Ln. 56-67; Prentice: [0057]).

With regarding to **claim 9**, Zimmermann in view of Prentice discloses a method wherein said at least one image-processing parameter created is used for the processing of the image to be generated (Zimmermann: Col. 5, Ln. 56-67; Prentice: [0057]).

With regarding to **claim 11**, Zimmermann discloses a device comprising a camera module and an electronic device (Fig. 1; camera 41/USB device; Col. 1, Ln. 5-20; Col. 4, Ln. 21-28; Col. 6, Ln. 14-41; a host is inherently connected to USB 20), comprising means for generating image data in the image sensor of the camera module (Figs. 1; camera 41), said image sensor comprising at least one row of pixels and said image data comprising the data generated by said rows of pixels (Col. 3, Ln. 51-55; the image sensor 12 inherently includes at least one row of pixels and generates image data from the row of pixel), a means for collecting statistical data on said image data (Col. 3, Ln. 23-25; Col. 5, Ln. 55-60), wherein said statistical data is suitable for processing an image to be generated (Col. 5, Ln. 55-67); wherein the device further comprises means for transmitting image data and statistical data from the camera module to the electronic device essentially at the same time (Fig. 6; see image and statistics data from two USB packets 94 and 96; Col. 6, Ln. 1-46).



However, Zimmermann fails to explicitly disclose a means for adjusting on the basis of said statistical data, said image sensor of the camera module for generating image data for a next image.

In the same field of endeavor, Prentice teaches an imaging device wherein automatic exposure control modifies contrast and brightness setting bases on a luminance histogram of previously captured images ([0057]; the luminance histogram of the previously captured images is interpreted as said statistical data). Prentice further teaches a host computer 12 that controls a camera picture-taking process by setting the exposure time via the CCD timing generator 32 from the microprocessor 38 ([0024]). In light of the teaching from Prentice, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Zimmermann to perform automatic exposure control from a luminance histogram of previously captured images. The modifications thus provide better image quality.

With regarding to **claim 12**, Zimmermann in view of Prentice discloses the same limitations as recited in claim 3. Therefore, claim 12 is analyzed and rejected as discussed in claim 3.

With regarding to **claim 13**, Zimmermann in view of Prentice discloses a device wherein said data frame comprises said image data and said statistical data interlaced with each other and that said data frame is transmitted from the camera module to the

electronic device on at least one bus (Zimmermann: Fig. 1; USB 20; Col. 6, Ln. 1-46; Prentice: USB 42).

With regarding to **claim 14**, Zimmermann in view of Prentice fails to explicitly disclose wherein said data transmission means are additionally implemented for transmitting said data frame from the camera module to the electronic device in the form of a serial synchronized differential signal (Zimmermann: Fig. 1; USB 20; Col. 6, Ln. 1-46; Prentice: USB 42).

With regarding to **claim 15**, Zimmermann in view of Prentice discloses the same subject matter as claimed in claim 11. Further more, Davis discloses a device wherein the device also comprises means for generating an image-processing parameter from the transmitted statistical data (Zimmermann: Col 5, Ln. 56-Col. 6, Ln. 41).

With regarding to **claim 16**, Zimmermann in view of Prentice discloses a device, wherein in addition, the device comprises means for image data processing to process the transmitted image data based on said image-processing parameter (Col. 6, Ln. 14-42; Zimmermann teaches the reception of statistics and image data at a host side; Col. 5, Ln. 60-67; Zimmermann teaches the usages of statistics data for adjusting white balancing).

With regarding to **claim 17**, Zimmermann in view of Prentice discloses a device wherein said means for image data processing have been implemented for processing the image to be generated (Zimmermann: Col 5, Ln. 56-Col. 6, Ln. 41).

With regarding to **claim 19**, Zimmermann in view of Prentice discloses a device wherein said device comprising said camera module and an electronic device (Zimmermann: Fig. 1; camera 41 and host computer; Prentice: Web camera 22 and host computer 12).

However, Zimmermann in view of Prentice fails to explicitly disclose said electronic device is a mobile communications terminal.

Official Notice is taken that it is well known and expected in the art to connect a webcam camera to portable laptop computer (host computer) via USB bus. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the devices of Zimmermann and Prentice by substituting a host computer with a laptop computer. The modifications thus provide more flexible the host computer.

With regarding to **claim 20**, Zimmermann in view of Prentice discloses the same limitations as claimed in claim 7. Therefore, claim 20 is analyzed and rejected as discussed in claim 7.

With regarding to **claim 21**, Zimmermann in view of Prentice discloses a method wherein said collecting of statistical data from said image data performed said camera

module, said statistical data including image brightness (Zimmermann: Col. 3, Ln. 23-25; Col. 5, Ln. 55-67).

With regarding to **claim 22**, Zimmermann in view of Prentice discloses the same limitations as claimed in claim 21. Therefore, claim 22 is analyzed and rejected as discussed in claim 21.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a) Li (US-6,833,862) discloses a host computer that corrects images based on statistics data transmitted a long with images data from a camera.

b) Harper (US-7,148,923) discloses a method for setting exposure/gain of an imager based on signals from a histogram processing module.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung H. Lam whose telephone number is 571-272-7367. The examiner can normally be reached on Monday - Friday 8AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, LIN YE can be reached on 571-272-7372. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2622

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HL  
07/21/08

/Lin Ye/  
Supervisory Patent Examiner, Art Unit 2622